AMENDMENTS TO THE CLAIMS:

This list of claims will replace all prior versions, and lists, of claims in the application.

1-24. (Canceled)

25. (Currently amended) A medical system, comprising:

a patient-implantable device, comprising:

a housing;

a plurality of electrodes coupled to the housing and configured for sensing cardiac electrical activity;

detection circuitry provided in the housing and coupled to at least some of the plurality of electrodes, the detection circuitry producing a cardiac electrical signal in response to the sensed cardiac electrical activity;

a sensor configured to sense movement of a heart and produce a sensor signal in response to the sensed heart movement;

sensor circuitry provided in the housing and coupled to the sensor, the sensor circuitry configured to produce an audio signal in response to the sensor signal;

memory provided in the housing and coupled to the detection circuitry and sensor circuitry, the memory configured to store the audio signal and the cardiac electrical signal;

a controller provided in the housing and coupled to the memory, detection circuitry, and sensor circuitry, the controller configured to detect heart sounds from the audio signal, discriminate between normal cardiac function and cardiac arrhythmia based on the cardiac electrical signal and the audio signal, and provide an output based on the discrimination between normal cardiac function and cardiac arrhythmia; and

communications circuitry provided in the housing and coupled to the controller, the communications circuitry configured to telemeter the cardiac electrical signal and the audio signal; and

a patient-external device comprising:

patient-external communications circuitry configured to receive the cardiac electrical signal and the audio signal telemetered from the patient-implantable device;

a storage media to store the cardiac electrical signal and the audio signal telemetered from the patient-implantable device; and

a user interface coupled to the patient-external communications circuitry, the user interface configured for providing a visual output representative of the cardiac electrical signal and an audio output representative of the audio signal.

26-34. (Canceled)

35. (Currently amended) A method of discriminating between normal cardiac function and cardiac arrhythmia using an implantable device, comprising:

sensing, from within a patient, movement of a heart and producing a sensor signal comprising an accelerometer signal in response to the sensed heart movement;

producing, within the patient, an audio signal using the sensor signal;

detecting heart sounds from the audio signal;

detecting, within the patient, cardiac electrical activity and producing a cardiac electrical signal in response to the detected cardiac electrical activity;

identifying cardiac features of the cardiac electrical signal;

storing, within the patient, the audio signal and the cardiac electrical signal; ~~and~~

telemetering the audio signal and cardiac electrical signal to a patient-external location;

correlating the heart sounds with the cardiac features of the cardiac electrical signal; and

discriminating between normal cardiac function and cardiac arrhythmia based on correlation between the heart sounds and the cardiac features, wherein at least one of correlating and discriminating is implemented at least in part using a circuit.

36-48. (Canceled)

49. (New) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises discrimination between normal heart rate and arrhythmic heart rate, wherein:

the heart rate is indicated to be normal and the cardiac electrical signal subject to electrical noise if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds; and

the heart rate is indicated to be arrhythmic if the cardiac electrical signal indicates high heart rate and the audio signal indicates modified heart sounds.

50. (New) The medical system of claim 25, wherein:

the cardiac function is determined to be normal if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates normal heart sounds; and

the cardiac function is determined to be arrhythmic if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates modified heart sounds.

51. (New) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises identification of electrical noise and wherein the presence of noise is indicated if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds.

52. (New) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises discrimination between normal sinus rhythm and one or both of ventricular tachycardia and fibrillation based on temporal correlation of cardiac sound features of the audio signal with features of the cardiac electrical signal.

53. (New) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia is based on temporal correlation of S1 heart sounds of the audio signal with QRS complexes of the cardiac electrical signal.

54. (New) The medical system of claim 25, wherein the controller is configured to open a correlation window based on a cardiac cycle feature fiducial point of the cardiac electrical signal to correlate heart sounds with cardiac cycle features of the same heart beat over a plurality of cardiac cycles and wherein discrimination between normal cardiac function and cardiac arrhythmia is based on temporal correlation between heart sounds and cardiac cycle features over the plurality of cardiac cycles.

55. (New) The medical system of claim 25, further comprising a human input, wherein production of the audio signal by the sensor circuitry is initiated based on triggering of the human input.

56. (New) The medical system of claim 25, wherein the output comprises transmission of an indication of the discrimination between normal cardiac function and cardiac arrhythmia by the communications circuitry to the patient-external communications circuitry and storage of the indication in memory.

57. (New) The medical system of claim 25, wherein the sensor is disposed on a lead connected to the patient-implantable device

58. (New) The medical system of claim 25, wherein the sensor is at least partially contained within the housing, and the housing and the plurality of electrodes form a rigid unitary structure.

59. (New) The method of claim 35, wherein discriminating between normal cardiac function and cardiac arrhythmia comprises discriminating between normal heart rate and arrhythmic heart rate, wherein:

the heart rate is indicated to be normal and the cardiac electrical signal subject to electrical noise if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds; and

the heart rate is indicated to be arrhythmic if the cardiac electrical signal indicates high heart rate and the sound signal indicates modified heart sounds.

60. (New) The method of claim 35, wherein:

the cardiac function is determined to be normal if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates normal heart sounds; and

the cardiac function is determined to be arrhythmic if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates modified heart sounds.

61. (New) The method of claim 35, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises identification of electrical noise and wherein the presence of noise is indicated if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds.

62. (New) The method of claim 35, wherein correlating the heart sounds with cardiac features of the cardiac electrical signal comprises correlating the timing of S1 heart sounds of the audio signal with QRS complexes of the cardiac electrical signal.

63. (New) The method of claim 35, wherein correlating the heart sounds with cardiac features of the cardiac electrical signal comprises opening a correlation window for each

occurrence of a particular cardiac cycle feature fiducial point of the cardiac electrical signal and identifying a heart sound within each window.

64. (New) The method of claim 35, wherein the step of detecting heart sounds is initiated based on triggering of a human input.

65. (New) The method of claim 35, further comprising:

transmitting an indication of the discrimination between normal cardiac function and cardiac arrhythmia from a patient internal location to a patient-external medical device; and

storing the indication in memory.